

# Report

## Potential for eHealth in rural and remote follow-up care

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DOI: 10.22215/sdhlab/2021.1

### *What is known?*

- Rural and remote communities in Canada and Australia report higher rates for many health conditions compared to their urban counterparts
- There are multiple barriers to accessing specialized health services in rural communities
- Inadequate follow-up care contributes to poorer health outcomes and increased rehospitalization
- Electronic health (eHealth) technologies have been used for decades but have yet to achieve widespread systemic adoption

### *What does this study add?*

- The role of eHealth technologies on follow-up care in rural and remote communities in Canada and Australia are examined
- Barriers to accessing healthcare services in rural and remote areas are investigated
- Future directions for eHealth services in rural and remote areas are explored

JUNE 17, 2021



## **BACKGROUND**

Rural and remote communities in Canada and Australia are disproportionately affected by barriers when accessing healthcare. Barriers include, but are not limited to: lengthy travel distances, inefficient communication between healthcare teams, and client disengagement in follow-up care (1–5). These barriers are notably evident when seeking access to more specialized health services (1). While, Canada and Australia have implemented electronic health (eHealth) technologies to mitigate issues of access to specialized healthcare services in rural and remote areas, their routine use in follow-up care has not been fully implemented (6,7).

eHealth can be described as any technology that is used to deliver health services electronically (8). It is available in several mediums such as: mobile health, telehealth, and electronic health records. Mobile health is a medium in which healthcare services are delivered via mobile technologies such as smartphones, tablets, and wearables (9,10). Additionally, telehealth involves the use of telephones or video-conferencing technologies to correspond with clients, or remote client monitoring technologies to collect data on their clients' health (6). Lastly, electronic health records are a form of eHealth technologies whereby health care providers securely store and share health information of clients (11,12).

eHealth technologies have been promoted in rural and remote communities as they have demonstrated the potential to dissolve barriers of access to healthcare services, facilitate efficient health service delivery, improve client care, and health outcomes in hard-to-reach areas (13). However, further research into the advantages and disadvantages of eHealth services in rural and remote communities is warranted. Thus, this report aims to identify the advantages and disadvantages of eHealth services among service users in rural and remote communities in Australia and Canada; specifically, examining the role eHealth plays in follow-up care, client experiences using eHealth as an alternative to face-to-face appointments, and suggestions for future implementation.

## KEY FINDINGS



### **Continuity of care**

eHealth technologies increase access to available healthcare services and authorizes physicians to share test findings, imaging results, and review medications with clients (2,3).

The sharing of information improved rates of early access to appropriate care, enabling client self-management, and improving client education, further facilitating their understanding of their health condition (2–5).



### **Coordination, collaboration and cooperation**

eHealth facilitates holistic and efficient service delivery as it permits healthcare team members to access and share client information easily; thus, providing faster and more reliable treatment for clients (14).



### **Prospects**

Clients report high satisfaction with eHealth services and usability of eHealth services. Clients valued e-visits as much as face-to-face visits and reported the use of e-visits as a time saving alternative to in-person appointments (15).

eHealth appointments also granted physicians more flexibility to perform other clinical duties, and accommodate the needs of multiple clients (15).



### **Barriers to service use**

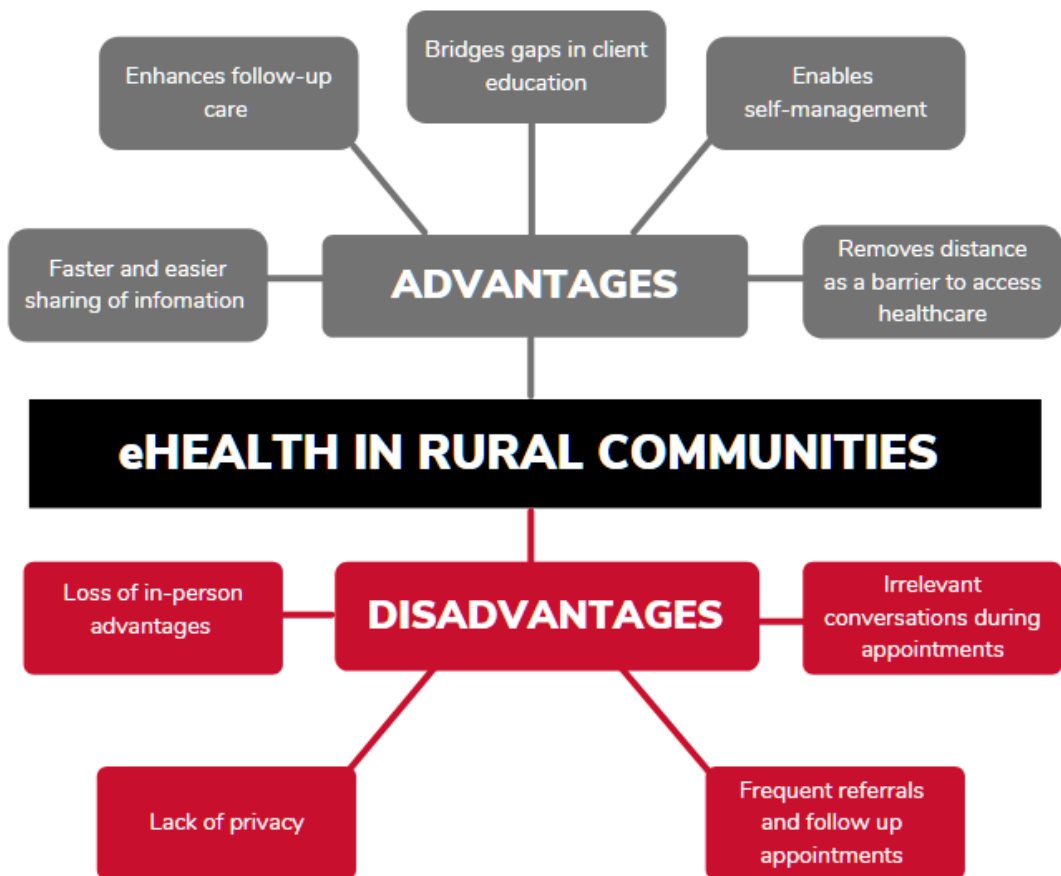
Privacy was a concern during at home visits and the use of an online medium for sharing personal health information (14,16–19).

While e-visits reduced wait times for follow-up appointments, some clients felt that follow-up appointments were not necessary, and physicians felt that some conversations were off topic and not relevant to the appointment (16).

The inability to conduct physical assessments was of great concern for both health care providers and clients (20). Face-to-face follow-up appointments were required for clients who underwent an operation and required post-operative care to mitigate any adverse side effects (21).

## ADVANTAGES AND DISADVANTAGES

This review identified five advantages and four disadvantages of eHealth services for follow-up care for service users in rural and remote communities in Canada and Australia (Figure 1). eHealth services enabled healthcare team members to share information about diagnosis, test findings, imaging results, and medications with clients in a timely matter, avoiding unnecessary referrals and long-wait times for follow-up appointments (2,3,5). Consequently, physicians found eHealth facilitated improved client education and client self-management (2–5). eHealth services removed distance as a barrier to accessing health services. However, a major disadvantage of eHealth services included the inability to complete physical assessments (20,21). Moreover, clients reported a concerns about online privacy regarding the sharing of personal health information (14,16–19). Clients also felt that in some instances there was no need for follow-up appointments (16). Lastly, physicians reported non-relevant conversations took up extra time during appointments (16).



## **FUTURE CONSIDERATIONS**

Although e-visits have proven to be beneficial in certain medical disciplines, in other fields they were deemed challenging (e.g., post-operative care). Therefore, it is imperative that future research analyzes how eHealth follow-up care can be implemented efficiently across various medical specialties. Logistical issues related to the availability of an electronic device and internet reliability remain common limitations. This issue may be addressed by an established eHealth site in a rural community, allowing e-visits for clients to save time and money on travel. Furthermore, alleviating client and provider privacy concerns is crucial for the sustainability of eHealth interventions. Promotion of secure and protected systems can offer clients reassurance on the safety and security of their private health information. In summary, a strong evidence-base is required centering these key priority areas to better inform policy and implementation of eHealth services in rural and remote communities.

## **METHODS**

This report is based on a structured scoping review undertaken to identify the scope of research on the role eHealth plays in follow-up care in rural and remote regions of Canada and Australia. The identification of appropriate literature for this review followed Arksey and O'Malley's five stage process, beginning with: 1) defining the key terms used in the search engines; 2) identification of relevant studies; 3) study selection based on a set of inclusion and exclusion criterion; 4) charting the data; and, 5) collating, summarizing, synthesizing and reporting on the findings of the articles (22). The scoping review identified 18 primary articles that met inclusion criteria. Articles focused on the role of eHealth, specifically barriers, enablers, and the utility of electronic health services in follow-up care.

## **ACKNOWLEDGEMENTS**

The scoping review that informed this report was prepared to fulfill the capstone group research requirement of the Master of Science in Health Science, Technology and Policy degree program. The report summarises the findings from the MSc thesis paper, *Cracking the Rural Health Code: Policy, Practice and Potential* (2020) by Alexa Mahling, Monica Sourial, and Sajra Trto. Our extended gratitude goes out to the Madawaska Valley communities and the residents who participated in our community engagement event.

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